

The lichen genera *Thelidium* and *Verrucaria* in the Leningrad Region (Russia)

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Abstract: Lichens from the genera *Thelidium* and *Verrucaria* in the Leningrad Region (including Saint-Petersburg) are revised. Altogether five species of *Thelidium* and 31 of *Verrucaria* are confirmed for this region. Four species (*Thelidium minimum*, *T. olivaceum*, *Verrucaria maculiformis* and *V. trabalis*) are new to the Leningrad Region, and 17 species (*Thelidium aphanes*, *T. fontigenum*, *Verrucaria christiansenii*, *V. elevata*, *V. epilitha*, *V. helsingiensis*, *V. illinoisensis*, *V. inaspecta*, *V. invenusta*, *V. lignicola*, *V. pilosoides*, *V. polystictoides*, *V. pseudovirescens*, *V. rejecta*, *V. tectorum*, *V. tornensis* and *V. transfugiens*) are new to Russia. Dubious records for the Leningrad Region include *Verrucaria acrotella*, *V. floerkeana*, *V. fusca*, *V. nigrescens*, *V. obnigrescens*, *V. umbrinula* and *V. viridula*.

Kokkuvõte: Samblike perekonnad *Thelidium* ja *Verrucaria* Leningradi oblastis (Venemaa)

Esitatakse ülevaade perekondade *Thelidium* ja *Verrucaria* liikidest Leningradi oblastis ja Peterburi linnas. Selles piirkonnas on nüüd teada viie liigi esinemine perekonnast *Thelidium* ja 31 *Verrucaria* liigi esinemine. Neli liiki (*Thelidium minimum*, *T. olivaceum*, *Verrucaria maculiformis* and *V. trabalis*) on uued Leningradi oblastile ja 17 liiki (*Thelidium aphanes*, *T. fontigenum*, *Verrucaria christiansenii*, *V. elevata*, *V. epilitha*, *V. helsingiensis*, *V. illinoisensis*, *V. inaspecta*, *V. invenusta*, *V. lignicola*, *V. pilosoides*, *V. polystictoides*, *V. pseudovirescens*, *V. rejecta*, *V. tectorum*, *V. tornensis* and *V. transfugiens*) on uued Venemaale. Kaheldavad on teatud järgmiste liikide leidumise kohta Leningradi oblastis: *Verrucaria acrotella*, *V. floerkeana*, *V. fusca*, *V. nigrescens*, *V. obnigrescens*, *V. umbrinula* and *V. viridula*.

INTRODUCTION

Although lichens of the Leningrad Region (including Saint-Petersburg) have been particularly well studied in recent years (Malysheva, 2003; Himelbrant et al., 2006; Kuznetsova et al., 2007; Stepanchikova et al., 2011), some taxonomic groups such as the genera *Thelidium* and *Verrucaria* have attracted little attention of lichenologists. First collections of crustose pyrenocarpous lichens were made by Finnish lichenologists during the second half of the 19th century, most in the western part of the region in the area of Vyborg town and on Hogland (Gogland) Island (Vainio, 1878, 1921; Brenner, 1886). At the beginning of the 20th century, Russian lichenologists worked rather actively in the area of Saint-Petersburg (e.g. Elenkin, 1904; Rassadina, 1930), but *Thelidium* and *Verrucaria* were almost totally overlooked: in the lichen

herbarium of the Komarov Botanical Institute (LE) only five specimens of *Verrucaria* and no *Thelidium* were present. Data on the genera *Thelidium* and *Verrucaria* from the Leningrad Region started to appear in Russian publications only recently (e.g. Malysheva, 2003; Himelbrant et al., 2006).

The current delimitations of the genera *Thelidium* and *Verrucaria* are largely unsettled, as molecular data showed that both genera are polyphyletic assemblages of taxa with a rather limited number of characteristic morphological features (Gueidan et al., 2007; Savić et al., 2008). Many specimens cannot be identified based on morphology only, and major changes concerning the generic delimitation of *Thelidium* and *Verrucaria* are to be expected (see e.g. Gueidan et al., 2009). The present paper revises existing

Thelidium and *Verrucaria* specimens available for the Leningrad Region, excluding *Hydropunctaria maura* (Wahlenb.) Keller, Gueidan & Thüs, a marine species recently transferred to a new genus. Many species widely distributed in the neighbouring areas such as Finland have not been found in the Leningrad Region, although several of them probably occur in the region.

MATERIAL AND METHODS

The main part of the material was collected from 2001 to 2011 by the second, third, fourth and fifth authors together with other colleagues in different parts of the Leningrad Region (LR): Saint-Petersburg (SPb), the Western Leningrad Region (WLR) and the Eastern Leningrad Region (ELR) (Stepanchikova et al., 2010a). These specimens were deposited in H. Furthermore, other specimens in H, H-NYL, TUR-V, LE and LECB were investigated. Specimens were identified/revised by the first author. References to publications including morphological descriptions are given for each species. When no recent and complete morphological description was available for a species, a short one was provided based on the Finnish and Russian specimens studied here.

North-Western European Russia includes four regions: the Leningrad Region (including Saint-Petersburg), the Pskov Region, the Novgorod Region and the Republic of Karelia (see Andersson et al., 2009). Regional checklists of lichens are available for the Eastern Leningrad Region (Kuznetsova et al., 2007), the Pskov Region (Istomina & Likhacheva, 2010), the Novgorod Region (Kataeva, 2009) and the Republic of Karelia (Fadeeva et al., 2007).

Traditional abbreviations were used for the biogeographical provinces of Eastern Fennoscandia (e.g. Kotiranta et al., 1998): Ik – Isthmus karelicus, Ka – Karelia australis, Kl – Karelia ladogensis.

THE SPECIES

THELIDIUM APHANES J. Lahm

This calcicolous species is rare in Finland (Pykälä, 2010). New to Russia.

Description – Thallus endolithic, white or grey. Perithecia immersed. No involucrellum. Exciple dark, 0.15–0.2(–0.25) mm. Spores 3-septate, 26–45 × 10–15 µm.

Note – *T. aphanes* is close to *T. incavatum* Mudd, but the latter species has larger perithecia (exciple 0.2–0.5 mm).

Distribution in Fennoscandia and Baltic countries – Finland (Pykälä, 2010).

Specimen examined – ELR, Boksitogorsk District, Ragusha River protected area, left bank of the Ragusha River, 59°16'59"N, 33°55'27"E, floodplain elm forest, on calcareous boulder, 19.07.2006, Kuznetsova Rag-10 (H).

THELIDIUM FONTIGENUM A. Massal.

The species has been rather rarely found on calcareous rocks in Finland. New to Russia.

Description – see Orange (2008) and Orange et al. (2009).

Distribution in Fennoscandia and Baltic countries – Norway, Sweden, Finland (Nordin et al., 2011).

Specimens examined – ELR, Boksitogorsk District, Ragusha River protected area, right bank of the Ragusha River, 1300–1500 m downstream from the bridge, near the waterfalls, 59°17'03"N, 33°55'13"E, on calcareous cliff, 19.07.2004, Kuznetsova 117-04 (H); Ragusha River protected area, left bank of the Ragusha River, 59°16'59"N, 33°55'27"E, floodplain elm forest, on calcareous boulder, 19.07.2006, Kuznetsova Rag-10 (H).

THELIDIUM MINIMUM (A. Massal. ex Körb.) Arnold
The species has been rarely found on calcareous rocks in northern Europe. New to North-Western European Russia.

Description – Thallus thin, grey, green or brown. Perithecia 0.1–0.2 mm, 1/2-immersed. Involucrellum apical. Exciple pale, 0.1–0.15(–0.2) mm. Spores (0–)1-septate, 12–17 × (4–)5–6(–7) µm. Distribution in Fennoscandia and Baltic countries – Finland (Nordin et al., 2011).

Specimen examined – ELR, Boksitogorsk District, Ragusha River protected area, right bank of the Ragusha River, 1300–1500 m downstream from the bridge, near the waterfalls, 59°17'03"N, 33°55'13"E, on calcareous cliff, 19.07.2004, Kuznetsova 117-04 (H).

THELIDIUM MINUTULUM Körb.

The species occurs both on natural and artificial calcareous substrata in northern Europe. Recently published records from the SPb, Schuch'e Lake and Popovka River (Stepanchikova et al., 2009; 2010b) are uncertain because perithecia of *T. minutulum* were no longer found in the specimens.

Description – see Orange (2008) and Orange et al. (2009).

Note – Recently, Thüs & Nascimbene (2008) showed that *T. rehmii* Zschacke is morphologically difficult to separate from *T. minutulum*. The specimen examined is very sparse. Thus, the possibility that the specimen represents *T. rehmii* can not be fully excluded. However, *T. rehmii* is only known from a few localities in southern Germany (Thüs & Nascimbene, 2008).

Distribution in Fennoscandia and Baltic countries – Finland, Norway, Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2011), Lithuania (Motiejūnaitė, 2002).

Specimen examined – SPb, Kronshtadt District, Kotlin Island, Zapadny Kotlin protected area, ca. 200 m E of the fort Shantz, 60°01'33"N, 29°40'33"E, ruins in a herb-rich meadow, on brick, 12.07.2007, Konoreva & Stepanchikova Kr-15 (H).

THELIDIUM OLIVACEUM (Fr.) Körb.

The species is not rare on calcareous rocks and in lime quarries in southern Finland (Pykälä, unpublished observations). New to North-Western European Russia.

Description – Thallus thin, often fleck-like, greenish brown or medium brown. Perithecia 0.15–0.25 mm, 1/4–1/2-immersed. Involucrellum covers perithecium to the exciple-base level, appressed to the exciple or slightly diverging from it near the base. Exciple pale or dark, 0.15–0.25 mm. Spores 1-septate, 14–20(–22) × 6–8(–9) µm.

Distribution in Fennoscandia and Baltic countries – Finland (Nordin et al., 2011), Estonia (Randlane et al., 2011), Latvia (Piterāns, 2001).

Specimen examined – WLR, Kirovsk District, between Vasil'kovo and Gorodische villages, Lava River Canyon protected area, 59°52'N, 31°35'E, Ordovician outcrops on the Lava River bank slopes, on calcareous stone, 25.05.2008, Stepanchikova Lava-1 (H).

VERRUCARIA AETHIOBOLA Wahlenb.

Verrucaria aethiobola is widely distributed and grows on rocks on shores. It has been collected in the past from the WLR (Vainio, 1921; Räsänen, 1921). The specimen of *V. aethiobola* collected in Nikola (ELR) and published by Kuznetsova et al. (2007) corresponds in fact to *V. margacea*.

Description – see Orange (2008).

Distribution in Fennoscandia and Baltic countries – Finland, Norway, Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2011), Lithuania (Motiejūnaitė et al., 2005).

Specimens examined – WLR, Kingisepp District, Ka, Hogland Island, 1873, Brenner s.n. (H-NYL 2836); Ka, Hogland Island, in littore, 1875, Vainio s.n. (H-NYL 2835); Ka, Hogland Island, Lounatpuoli, on shore, 1875, Vainio s.n. (TUR-V 30447); Priozersk District, Ik, Portovoe, ca. 9 km SEE of Gromovo (former Haparainen, Sakkola), 60°40'N, 30°20'E, 07.1917, Räsänen s.n. (H).

VERRUCARIA BOBLENSIS Servit

The species has recently been reported as new to Austria, Finland and Russia (Breuss & Brand, 2010; Pykälä, 2011; Stepanchikova et al., 2011), and may in fact be common and widely distributed. New to SPb and ELR.

Description – see Pykälä (2011).

Distribution in Fennoscandia and Baltic countries – Finland (Pykälä, 2011).

Specimens examined – SPb, Vyborg District, Novorolovskiy Woodland Park, near railway, 60°03'04"N, 30°16'48"E, mixed young forest, on calcareous stone, 16.07.2009, Kataeva & Stepanchikova Orl-ad.5 (H); Kurortny District, between Lisy Nos and Ol'gino, Severnoe Poberezh'je Nevskoj Guby protected area, 59°59'57"N, 30°04'33"E, on calcareous stone on the road, 15.07.2007, Konoreva & Stepanchikova Lis-11 (H); Kronshtadt District, Kotlin Island, protected area Zapadny Kotlin, near fort Shantz, 60°01'33"N; 29°40'33"E, ruins in a herb-rich meadow, on brick, 12.07.2007, Konoreva & Stepanchikova Kr-15 (H, in the specimen of *Thelidium minutulum*); Pushkin District, vicinity of Pavlovsk, Outcrops on the Popovka River protected area, right bank of the Popovka River, 59°39'57"N, 30°24'34"E, on calcareous outcrops on the slope, 19.05.2010, Himelbrant & Stepanchikova Pp-06 (H); WLR, Vyborg District, Ka, Berezovye Islands (Koiviston Saaret), Bol'shoj Berezovyy Island (Koivusaari), south-eastern margin of Krasny Ostrov village, 60°17'N, 28°40'E, on concrete of house ruins, 13.08.2008, Ahti 68400 (H 9202188); ELR, Lodejnoe Pole District, Nizhnesvirsky Nature Reserve, ca. 2 km NW of the Lachta village, 60°38'41"N, 33°03'35"E, young pine forest, on brick, 23.08.2001, Himelbrant & Kuznetsova 68-01 (H).

VERRUCARIA BRYOCTONA (Th. Fr.) Orange

This species, which occurs on mosses, soil and plant debris, may be widely distributed in the study area (Stepanchikova et al., 2010c; Stepanchikova et al., 2011).

Description – see Orange (2008) and Orange et al. (2009).

Distribution in Fennoscandia and Baltic countries – Finland, Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2011), Lithuania (Motiejūnaitė, 1999).

Specimen examined – WLR, Vyborg District, Ka, Bol'shoj Berezovy Island (Koivusaari), cape between Zakatnaya and Poputnaya bays, 60°15'52"N, 28°40'42"E, old artillery battery, on soil and plant debris over walls and floor, 13.08.2008, Alexeeva & Ahti s.n. (H).

VERRUCARIA CHRISTIANSENII Servit

This is a rarely reported species originally described from Denmark. New to Russia.

Description – see Pykälä (2011).

Distribution in Fennoscandia and Baltic countries – Finland (Pykälä, 2011), Lithuania (Motiejūnaitė et al., 2012).

Specimens examined – SPb, Kronshtadt District, Kotlin Island, Zapadny Kotlin protected area, fort Shantz, 60°01'33"N, 29°40'27"E, on the margin of an old concrete wall, 12.07.2007, Konoreva & Stepanchikova Kr-18 (H); Kotlin Island, Zapadny Kotlin protected area, E of the fort Shantz, 60°01'33"N, 29°40'33"E, ruins in a herb-rich meadow, on brick, 12.07.2007, Konoreva & Stepanchikova Kr-15 (H, in the specimen of *Thelidium minutulum*); Pushkin District, vicinity of Pavlovsk, Outcrops on the Popovka River protected area, right bank of the Popovka River, 60°40'00"N, 30°24'08"E, on small calcareous stones on the slope, 11.07.2010, Stepanchikova Pp-ad.2 (H); vicinity of Pavlovsk, Outcrops on the Popovka River protected area, right bank of the Popovka River, 59°39'57"N, 30°24'34"E, on calcareous outcrops on the slope, 19.05.2010, Himelbrant & Stepanchikova Pp-06 (H); WLR, Vyborg District, Ka, Berezovye Islands (Koiviston Saaret), Severny Berezovy Island (Piisaari), former village near Veprevskaya bay, 60°27'N, 28°27'E, meadow with remnants of buildings, on concrete, 03.05 and 06.05.2000, Alexeeva & Himelbrant N.040.00 and N.003.00 (H); Ka, Berezovye Islands (Koiviston Saaret), Zapadny Berezovy Island (Tiurinsaari), Signalnaya hill, 60°20'N, 28°30'E, old military construction, on concrete, 08.07.2004, Alexeeva Z.37.04 (H).

VERRUCARIA DENUDATA Zschacke (syn. V. HYDRELA auct., non Ach.)

Verrucaria denudata occurs mainly on rocks on shores, but also on other wet siliceous and calciferous rocks. New to SPb. Collected from Hogland (WLR) by Nylander (1852), but the specimen was not found in H or H-NYL.

Description – see Orange (2008) and Orange et al. (2009).

Distribution in Fennoscandia and Baltic countries – Finland, Norway, Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2011), Latvia (Piterāns, 2001), Lithuania (Motiejūnaitė, 1999).

Specimen examined – SPb, Krasnoe Selo District, vicinity of Duderhof, Dudergofskie Vysoty protected area, northern slope of Voron'ja hill, 59°42'09"N,

30°07'48"E, ash forest with hazel, on siliceous stone, 07.10.2007, Himelbrant, Konoreva & Stepanchikova Duder-2 (H).

VERRUCARIA DOLOSA Hepp

One of the most frequently found *Verrucaria* species in the LR, growing both on calcareous and siliceous rocks and stones. New to WLR.

Description – see Breuss & Berger (2010).

Distribution in Fennoscandia and Baltic countries – Finland, Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2011), Lithuania (Motiejūnaitė, 1999).

Specimens examined – SPb, Vyborg District, Novorlovsky Woodland Park, central part, S to Zapovednaya street, 60°02'51"N, 30°17'09"E, near the path, on concrete, 16.07.2009, Kataeva & Stepanchikova Orl-ad.6 (H); Novorlovsky Woodland Park, shore of the sandpit in the southern part of the park, 60°02'12"N, 30°16'45"E, on siliceous stone in *Salix* growth, 18.07.2009, Stepanchikova Orl-ad.3 (H); Primorsky District, between Lisy Nos and Ol'gino, Severnoe Poberezh'je Nevskoj Guby protected area, 59°59'35"N, 30°05'49"E, on concrete on disturbed ground, 15.07.2007, Konoreva & Stepanchikova Lis-13 (LE-L10357); Pushkin District, vicinity of Pavlovsk, Outcrops on the Popovka River protected area, Popovka River valley, 59°39'37"N, 30°22'09"E, floodplain *Alnus incana* forest, on granite stone, 08.05.2010, Himelbrant & Kuznetsova Pp-01 (H); vicinity of Pavlovsk, Outcrops on the Popovka River protected area, right bank of the river, 59°39'57"N, 30°24'34"E, on calcareous outcrops on the slope, 19.05.2010, Himelbrant & Stepanchikova Pp-06 (H); vicinity of Pavlovsk, Outcrops on the Popovka River protected area, left bank of the river, 59°40'01"N, 30°24'30"E, on calcareous outcrops on the slope, 19.05.2010, Himelbrant & Stepanchikova Pp-07 (H); Krasnoe Selo District, vicinity of Duderhof (Dudergof), 30.06.1929, Savicz s.n. (LE-L10364); vicinity of Duderhof, Dudergofskie Vysoty protected area, southern slope of Voron'ja hill, 59°42'09"N, 30°07'21"E, linden-maple forest, on calcareous stone, 07.10.2007, Himelbrant, Konoreva & Stepanchikova Duder-1 (H); vicinity of Duderhof, Dudergofskie Vysoty protected area, northern slope of Voron'ja hill, ash forest with hazel, on rusty iron, 07.10.2007, Himelbrant, Konoreva & Stepanchikova Duder-2 (H); WLR, Priozersk district, SW to Orekhovo, right bank of the Smorodinka River, 60°29'N, 30°10'E, former Finnish village, on granite, 28.08.2011, Stepanchikova Smorod-ad.13 (H, V. cf. *dolosa*); Kirovsk District, between Vasil'kovo and Gorodische villages, Lava River Canyon protected area, 59°52'N, 31°35'E, on calcareous Ordovician outcrops on the slopes of the river valley, 25.05.2008, Stepanchikova Lava-1 (H); ELR, Boksitogorsk District, Ragusha River protected area, right bank of the Ragusha River, 1300–1500 m downstream from the bridge, near the waterfalls, 59°17'03"N, 33°55'13"E,

on calcareous cliff, 19.07.2004, Kuznetsova 117-04 (H); Ragusha River protected area, valley of the Ragusha River, 59°16'45"N, 33°55'53"E, floodplain elm forest on the slope, on calcareous stones, 19.07.2006, Kuznetsova Rag-11 (H); Lodeynoe Pole District, right bank of the Pil'chuzhnya River, along the road, ca. 2 km SE of Humbaritsy, 60°39'47"N, 32°57'17"E, pine forest, on siliceous stone, 10.08.2001, Kuznetsova & Himelbrant 317-35-01 (LECB).

VERRUCARIA ELEVATA (Nyl.) Zschacke

In northern Europe, *V. elevata* has been previously known from calcareous rocks and concrete in Finland (Pykälä, 2010). New to Russia.

Description – see Breuss & Berger (2010).

Distribution in Fennoscandia and Baltic countries – Finland (Pykälä, 2010).

Specimen examined – SPb, Kronstadt District, Kotlin Island, Zapadny Kotlin protected area, fort Shantz, 60°01'31"N, 29°40'24"E, on concrete wall, 21.07.2007, Konoreva & Stepanchikova Kr-20-ad. (H).

VERRUCARIA EPILITHEA Vain.

The species has been originally described from southern Finland (Vainio, 1921) where it is common on calcareous rocks, in lime quarries and on concrete. New to Russia.

Description – Thallus endolithic or usually epilithic, up to 0.2 mm thick, white or grey. Perithecia 0.2–0.3(–0.35) mm, 1/2–3/4-immersed. Involucrellum apical, 40–60 µm thick. Exciple dark (occasionally solitary pale exciples), 0.2–0.25(–0.3) mm. Periphyses ca. 20–30 × 2–3 µm. Spores 18–25 × (8)–9–13 µm.

Note – *Verrucaria epilitha* is close to *V. muralis* Ach. The most prominent difference is that in *V. epilitha* the exciple is dark while in *V. muralis* it is pale. *Verrucaria tornensis* H. Magn. and *V. epilitha* may be difficult to separate from each other. *V. tornensis* has thinner involucrellum (30–50 µm thick) and smaller exciple (0.15–0.2 mm).

Distribution in Fennoscandia and Baltic countries – Finland, Sweden (Nordin et al., 2011).

Specimens examined – SPb, Pushkin District, vicinity of Pavlovsk, Outcrops on the Popovka River protected area, right bank of the Popovka River, 59°39'46"N, 30°22'30"E, open anthropogenic meadow, on concrete, 08.05.2010, Himelbrant & Kuznetsova Pp-03 (H); ELR, Boksitogorsk District, Ragusha River protected area, right bank of the Ragusha River, 59°17'03"N, 33°55'13"E, on calcareous cliff, 19.07.2004, Kuznetsova 117-04 (H, in the specimen of *V. transfugiens*); WLR, Kingisepp District, Ka, Hogland Island, Ylikäytävä, 07.08.1868, Brenner s.n. (H); Vyborg District, Ka, Berezovye Islands (Koiviston Saaret), Severny Berezovy

Island (Piisaari), eastern shore, 60°27'N, 28°28'E, old military construction, on concrete, 21.07.2003, Alexeeva N.007.03 (H).

VERRUCARIA GLAUCOVIRENS Grumann

The species is rare on calcareous rocks and concrete. It was reported from the WLR, Viipuri by Vainio (1878, 1921). The specimen from Zelenogorsk is different both ecologically and morphologically (with abundant pale green isidioid outgrowth). New to SPb.

Description – see Breuss (2007) and Breuss & Berger (2010).

Distribution in Fennoscandia and Baltic countries – Finland, Sweden (Nordin et al., 2011).

Specimens examined – SPb, Kurortny District, Ik, vicinity of Zelenogorsk (Terijoki), Schuch'je Lake protected area, SW to Druzhinnoe Lake, 60°13'30"N, 29°45'01"E, in a mixed forest, on granite stone, 08.10.2008, Himelbrant & Stepanchikova Schuchad.4 (H, *V. aff. glaucovirens*); WLR, Vyborg District, Ka, Vyborg (Viipuri), on stone, 1875, Vainio s.n. (H-NYL 2732 and TUR-V 30269).

VERRUCARIA HELSINGIENSIS Vain.

This is a rare species that was originally described from Finland by Vainio (1921). New to Russia.

Description – Thallus (0.1–)0.2–0.35 mm thick, pale brown or medium brown, rimose or areolate, areoles 0.3–1 mm. Perithecia 0.2–0.25(–0.3) mm, 3/4(–1)-immersed. Involucrellum apical, 30–50 µm thick. Exciple dark, 0.2–0.25 mm. Spores (12–)15–20 × 7–10 µm.

Note – The thallus of *V. helsingiensis* is thicker and darker than in the *V. muralis* species complex.

Distribution in Fennoscandia and Baltic countries – Finland, Sweden (Nordin et al., 2011).

Specimen examined – SPb, Vasileostrovsky District, quay near the Marine Station (Inrybprom), 59°56'N, 30°14'E, on concrete, 28.05.1995, Malysheva 133-5 (LE-L5126).

VERRUCARIA ILLINOISENSIS Servit

This species is rather common on calcareous rocks in southern Finland. New to Russia.

Description – Thallus thin or rarely endolithic, 0.02–0.15(–0.2) mm thick, white, grey or pale brownish. Perithecia 0.2–0.3 mm, 1/2–3/4-immersed. Involucrellum apical, (30–)40–60(–70) µm thick. Exciple pale, 0.2–0.25 mm. Periphyses 20–25 × 2–3 µm. Spores 17–25 × 8–13 µm.

Note – Superficially, *V. illinoisensis* is similar to *V. muralis*, but the latter has thinner and longer periphyses ($25\text{--}35 \times 2 \mu\text{m}$). Perithecia are also often larger ($0.2\text{--}0.4 \text{ mm}$). *Verrucaria boblensis* has shorter spores ($15\text{--}20 \times 8\text{--}11 \mu\text{m}$) and longer periphyses ($25\text{--}35 \times 2 \mu\text{m}$) (Pykälä, 2011).

Distribution in Fennoscandia and Baltic countries – Finland (Nordin et al., 2011), Lithuania (Motiejūnaitė et al., 2012).

Specimen examined – ELR, Boksitogorsk District, Ragusha River protected area, canyon of the Ragusha River, $59^{\circ}16'45''\text{N}$, $33^{\circ}55'53''\text{E}$, elm forest on the river valley slope, on calcareous stones in the stream, 19.07.2006, Kuznetsova Rag-11 (H).

VERRUCARIA INASPECTA Servít (syn. *V. OLIVACELLA* Servít)

The species prefers shady habitats and may grow both on calcareous and siliceous rocks like *V. dolosa*. New to Russia.

Description – see Breuss (2007) and Pykälä & Breuss (2009).

Note – *Verrucaria inaspecta* is similar to *V. dolosa*, but has larger spores: $15\text{--}22 \times 6\text{--}9 \mu\text{m}$ ($11\text{--}17 \times 5\text{--}7 \mu\text{m}$ in *V. dolosa*). *Verrucaria olivacella* Servít is a synonym of *V. inaspecta* (Pykälä & Breuss, 2011).

Distribution in Fennoscandia and Baltic countries – Finland, Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2011), Lithuania (Motiejūnaitė et al., 2012).

Specimens examined – ELR, Boksitogorsk District, Ragusha River protected area, right bank of the Ragusha River, $59^{\circ}17'03''\text{N}$, $33^{\circ}55'13''\text{E}$, on calcareous cliff, 19.07.2004, Kuznetsova 117-04 (H); WLR, Kirovsk District, between Vasil'kovo and Gorodische villages, Lava River Canyon protected area, $59^{\circ}52'\text{N}$, $31^{\circ}35'\text{E}$, Ordovician outcrops on the Lava River bank slopes, on calcareous stone, 25.05.2008, Stepanchikova Lava-6 (H).

VERRUCARIA INTERNIGRESCENS (Nyl.) Erichsen

Description – see Orange (2008) and Orange et al. (2009).

Distribution in Fennoscandia and Baltic countries – Finland, Norway, Sweden (Nordin et al., 2011). The type material of the species is from the WLR.

Specimens examined – WLR, Kingisepp District, Ka, Hogland Island, Somerikonrantavuoret, rannalla, 1875, Vainio s.n. (TUR-V 30450; H-NYL 2936, syntypes); Ka, Hogland Island, Kiiskinkylä, 20.05.1939, Pankakoski s.n. (H).

VERRUCARIA INVENUSTA H. Magn.

Verrucaria invenusta is a rarely collected species growing on calcareous and schistose rocks. New to Russia.

Description – Thallus thinly epilithic, pale grayish brown or medium brown, fleck-like or rimose, ca. $0.02\text{--}0.15 \text{ mm}$ thick. Perithecia $0.2\text{--}0.3(0.35) \text{ mm}$, $1/4\text{--}1/2$ -immersed. Involucellum to the exciple-base level, ca. $30\text{--}50 \mu\text{m}$ thick. Exciple pale or dark (initially pale), $0.15\text{--}0.25 \text{ mm}$. Spores $17\text{--}25 \times 8\text{--}13 \mu\text{m}$.

Distribution in Fennoscandia and Baltic countries – Finland, Sweden (Nordin et al., 2011).

Specimen examined – WLR, Vyborg District, Ka, Berезовые Islands (Koiviston Saaret), Zapadny Berezhov Island (Tiurinsaari), $60^{\circ}20'\text{N}$, $28^{\circ}31'\text{E}$, old military construction, on concrete, 03.07.2004, Alexeeva Z.01.04 (H).

VERRUCARIA LATEBROSA Körb.

This is a common species on rocks on shores. It has been previously recorded from the WLR (Vainio, 1878, 1921).

Description – see Orange (2008).

Distribution in Fennoscandia and Baltic countries – Finland, Norway, Sweden (Nordin et al., 2011), Latvia (Piterāns, 2001).

Specimens examined – WLR, Kingisepp District, Ka, Hogland Island, Laivalovenniemi, on stone, 24.08.1925, Räsänen s.n. (H); Vyborg District, Ka, Vyborg (Viipuri), Vanha-Viipuri, on seashore rock, 05.1875, Vainio s.n. (TUR-V 30504, 30437).

VERRUCARIA LIGNICOLA Zschacke

Verrucaria lignicola grows on shores on bases of trees, on exposed tree roots and on logs. The species is rarely collected, known from Belgium, Finland (Pykälä & Breuss, 2009) and France (Roux, 2012). New to Russia.

Description – Thallus thin, grey, brownish or green. Perithecia $0.15\text{--}0.25 \text{ mm}$, $1/2\text{--}3/4$ -immersed, often thalline covered except the apex. Involucellum reaching down to the level of the exciple base, ca. $20\text{--}40 \mu\text{m}$ thick, appressed to the exciple or slightly diverging from it near the base. Exciple pale, $0.1\text{--}0.2 \text{ mm}$. Spores $15\text{--}20 \times 7\text{--}9 \mu\text{m}$.

Note – *Verrucaria corticola* Servít and *V. trabicola* Arnold ex Servít are rather similar, but differ in the spore size: $14\text{--}18 \times 5\text{--}7 \mu\text{m}$ and $19\text{--}23 \times 9\text{--}12 \mu\text{m}$, respectively (Lendemer & Breuss, 2009). *V. denudata* can also occasionally be epiphytic, but its involucellum is strongly diverging from the exciple. *V. lignicola* has been considered as a

synonym of *V. sublobulata* Eitner & Servit (Thüs & Schultz, 2009). According to Thüs & Schultz (2009) involucrellum of *V. sublobulata* may be apical or extends to the exciple-base level. According to Orange et al. (2009) involucrellum of *V. sublobulata* is predominantly apical, but “occasionally extending down to sides of the exciple”. In all Finnish and Russian *V. lignicola* specimens involucrellum extends to the exciple-base level. Furthermore, *V. sublobulata* has not been found in Finland. If the species are conspecific, one would expect to find epilithic and epiphytic populations growing close to each other. Aptroot and Thüs (in Lumbsch et al., 2011) examined the type material of *V. lignicola* and found out that thin involucrellum is fading downwards. It remains to be studied, if the northern European material is conspecific with the type of *V. lignicola*. At the moment we prefer to keep *V. lignicola* separated from *V. sublobulata*.

Distribution in Fennoscandia and Baltic countries – Finland (Pykälä & Breuss, 2009).

Specimen examined – WLR, Priozersk District, Kl, Prochnoe, Kaukola, vicinity of Bogatyri (Koverila), Koskensilta, Alamyly, 61°04'25"N, 29°52'45"E, old water mill, on wet lignum, 02.08.1935, Laurila s.n. (H).

VERRUCARIA MACULIFORMIS Kremp.

New to North-Western European Russia.

Description – Thallus granular-areolate or fleck-like, thin, medium brown or dark brown. Perithecia 0.2–0.25 mm, 1/4–1/2-immersed. Involucrellum to the middle of the exciple or sometimes almost to the base of the exciple, slightly or moderately diverging from the exciple, ca. 30–50 µm thick. Exciple dark, 0.15–0.2(–0.25) mm. Spores 14–20 × 6–8(–9) µm.

Note – The spore size is intermediate between *V. fusca* Pers. and *V. memnonia* (Flot. in Körb.) Arnold in which the involucrellum is appressed to the exciple and reaches to the exciple-base level. Distribution in Fennoscandia and Baltic countries – Finland, Norway, Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2011).

Specimen examined – WLR, Kirovsk District, between Vasil'kovo and Gorodische villages, Lava River Canyon protected area, 59°52'N, 31°35'E, Ordovician outcrops on the Lava River bank slopes, on calcareous stone, 25.05.2008, Stepanchikova Lava-3 (H).

VERRUCARIA MARGACEA (Wahlenb.) Wahlenb.

Verrucaria margacea occurs on rocks on shores. The specimen reported by Kuznetsova et al.

(2007) is confirmed. In the specimen collected by Brenner in the WLR, the perithecia are too old for identification. However, based on Nylander's annotation of the spore size for this specimen, it probably belongs to *V. margacea*.

Description – see Orange (2008) and Orange et al. (2009).

Distribution in Fennoscandia and Baltic countries – Finland, Norway, Sweden (Nordin et al., 2011).

Specimens examined – WLR, Kingisepp District, Ka, Hogland Island, Wälikallio, on stone, 08.08.1868, Brenner s.n. (H); ELR, Podporozhje District, Swir River basin, former Nikola, on siliceous stone, 21.06.1875 and 25.06.1875, Elfving s.n. (H); Swir River basin, former Nikola, without date, Elfving s.n. (H-NYL 2879).

VERRUCARIA MAURIZA Nyl.

The species is only known from the type locality, the Hogland Island, Russia (Brenner, 1886: 125–126).

Description – Thallus thin, rimose to areolate, areoles tiny (0.1–0.2 mm), medium brown to dark brown, on piece on the right grey pruinose. Perithecia 0.15–0.2 mm, 1/2–3/4-immersed. Involucrellum apical or to the middle of the exciple, ca. 40–50 µm thick. Exciple pale, 0.15 mm. Spores (only few found) 15–20 × 6–8 µm. According to the original description the spore size is 16–21 × 8–10 µm (Brenner, 1886).

Note – The type material of *V. mauriza* is small with only few perithecia. Vainio (1921: 43) synonymized *V. mauriza* with *V. obnigrescens* Nyl. The syntypes of *V. obnigrescens* (Kirjavalaks, Variskallio, 1874, Norrlin s.n., H-NYL 2625; H) are also small. Thallus, thin, areolate, areoles tiny 0.1(–0.2) mm, dark brown, grey pruinose. Perithecia 0.2–0.3 mm, 1/2–3/4-immersed. Involucrellum apical, ca. 50 µm thick. Exciple dark brown, 0.2 mm. Spores 21–25 × 10–12 µm. According to the annotation label by Nylander the size of the spores was 22–27 × 10–14 µm. *Verrucaria obnigrescens* has larger perithecia and spores than *V. mauriza*, and a dark exciple. *V. mauriza* is not a synonym of *V. obnigrescens*, although both species have small areolate pruinose thallus.

Specimens examined – WLR, Kingisepp District, Ka, Hogland Island, Selkäpajanlahti, 11.06.1870, Brenner s.n. (H; H-NYL 2824, syntypes).

VERRUCARIA MEMNONIA (Körb.) Arnold

Verrucaria memnonia is rather common in Finland both on calcareous and siliceous rocks.

New to SPb. It was also recorded from the Schelejki protected area (ELR) by Kuznetsova et al. (2007), but the specimens were not available for study.

Description – see Breuss (2007).

Distribution in Fennoscandia and Baltic countries – Finland, Norway, Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2011).

Specimen examined – SPb, Petrodvorets District, vicinity of Sary Peterhof, Sergievka Park, western bank of the Kristatel'ka River, 59°53'38"N, 29°50'25"E, path, on stone, 06.10.2004, Himelbrant, Konoreva & Stepanchikova Serg-27 (H).

VERRUCARIA MURALIS Ach.

Verrucaria muralis is common in the study area in various calcareous habitats, although several specimens previously identified as *V. muralis* represent other species.

Description – Thallus endolithic or thin, 0.02–0.2 mm thick, continuous or irregularly rimose, rarely areolate, white or grey. Perithecia (0.2–)0.25–0.4 mm, 1/2–3/4-immersed. Involucrellum apical or extending to the middle of the exciple, (40–)50–70 µm thick. Exciple pale, 0.2–0.3(–0.35) mm. Periphyses 25–35 × 2 µm. Spores 17–25 × 8–12(–13) µm.

Distribution in Fennoscandia and Baltic countries – Finland, Norway, Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2011), Latvia (Piterāns, 2001), Lithuania (Motiejūnaitė, 1999).

Specimens examined – SPb, Kurortny District, vicinity of Sestroretsk, right bank of the Sestra River, 60°07'25"N, 29°58'46"E, memorial, on concrete, 10.09.2006, Himelbrant, Kuznetsova & Stepanchikova Sestr-18 (H); Petrograd District, Elagin Island, 59°58'33"N, 30°15'49"E, on concrete, 10.05.2005, Himelbrant, Kuznetsova, Konoreva & Stepanchikova Elag-1 (H, in the specimen of *Caloplaca crenulatella* (Nyl.) H. Olivier); Petrodvorets District, vicinity of Sary Peterhof, Sergievka Park, near the Leuchtenberg palace, 59°53'41"N, 29°50'33"E, on concrete, 06.10.2004, Himelbrant, Konoreva & Stepanchikova Serg-26 (LECB); Pushkin District, vicinity of Pavlovsk, Outcrops on the Popovka River protected area, right bank of the Popovka River, 59°39'57"N, 30°24'34"E, on calcareous outcrops on the slope, 19.05.2010, Himelbrant & Stepanchikova Pp-06 (H, two specimens); WLR, Vyborg District, Viipuri, on wall, 05.1875, Vainio s.n. (TUR-V); Tosno District, ca. 3 km NE of Babinskaya Luka village, the Ravan' River bank, on stones on clayey slope, [59°15'N, 31°33'E], 13.09.1999, Kataeva 30/99 (LE-L10356, 10359, 2 specimens); Kirovsk District, between Vasil'kovo and Gorodische villages, Lava River Canyon protected area, valley of the Lava River, 59°52'N, 31°35'E, on calcareous Ordovician

outcrops on the slopes of the river valley, 25.05.2008, Stepanchikova Lava-1 (H); ELR, Boksitogorsk District, Ragusha River protected area, left bank of the Ragusha River, 59°16'59"N, 33°55'27"E, floodplain elm forest, on calcareous boulder, 19.07.2006, Kuznetsova Rag-10 (H); Lodejnoe Pole District, Nizhnesvirsky Nature Reserve, ca. 2 km NW of the Lakhta village, 60°38'41"N, 33°03'35"E, near the road, on brick, 23.08.2001, Kuznetsova & Himelbrant 68-01 (H).

VERRUCARIA PILOSOIDES Servit

The species grows on calcareous rocks, and has been overlooked until recently. New to Russia. Description – see Breuss & Berger (2010) and Pykälä (2011).

Distribution in Fennoscandia and Baltic countries – Finland (Pykälä, 2011).

Specimens examined – SPb, Primorsky District, between Lisy Nos and Ol'gino, Severnoe Poberezh'ye Nevskoj Guby protected area, 59°59'35"N, 30°05'49"E, on concrete on disturbed ground, 15.07.2007, Konoreva & Stepanchikova Lis-13 (H); Pushkin District, vicinity of Pavlovsk, Outcrops on the Popovka River protected area, left bank of the Popovka River, 59°40'01"N, 30°24'30"E, on calcareous outcrops on the slope, 19.05.2010, Himelbrant & Stepanchikova Pp-07 (H); ELR, Boksitogorsk District, Ragusha River protected area, right bank of the Ragusha River, 1300–1500 m downstream from the bridge, near the waterfalls, 59°17'03"N, 33°55'13"E, on calcareous cliff, 19.07.2004, Kuznetsova 117-04 (H).

VERRUCARIA POLYSTICTOIDES Vain.

Verrucaria polystictoides has been rarely collected from calcareous rocks and concrete. New to Russia.

Description – Thallus 0.2–0.5 mm thick, areolate, grey, pale brown or medium brown, more rarely dark brown. Areoles 0.4–0.8 mm. Perithecia 0.15–0.2 mm, immersed in the thallus, 1–8 per areole. No involucrellum. Exciple pale to darkening, (0.1–)0.15–0.2 mm, the apex often thickened. Spores 12–19 × (5–)6–8 µm.

Note – *Verrucaria glaucovirens* has thicker thallus with larger areoles, which are secondarily subdivided into smaller units and slightly longer spores. However, the taxonomy of the *V. glaucovirens-polystictoides* complex is still problematic.

Distribution in Fennoscandia and Baltic countries – Finland (Vainio, 1921; Nordin et al., 2011).

Specimen examined – WLR, Gatchina District, Gatchina, park of Gatchina Palace, around Beloe Ozero Lake, on stone bridge, on calcareous stone, 16.06.1991, Vitikainen 12317 (H).

VERRUCARIA PSEUDOVIRESCENS Servit

This species is known from calcareous rocks (Breuss & Berger, 2010), but the specimen studied here comes from siliceous rocks. New to Russia.

Description – see Breuss & Berger (2010)

Distribution in Fennoscandia and Baltic countries – The species has not been previously recorded from northern Europe.

Specimen examined – SPb, Petrograd District, Elagin Island, between the First Northern Pond and the Bol'shaya Nevka River, 59°58'54"N, 30°16'08"E, park, on granite of the embankment, 10.05.2005, Himelbrant, Konoreva, Kuznetsova & Stepanchikova Elag-12 (H).

VERRUCARIA REJECTA Th. Fr.

The species has been rarely reported. It grows both on calcareous and siliceous rocks. New to Russia.

Description – Thallus granular, fleck-like, continuous or rimose, dark brown or black. Perithecia 0.15–0.25 mm, 1/4–1/2-immersed. Involucrellum to the exciple-base level, ca. 30–50 µm thick. Exciple pale to darkening, 0.15–0.2 mm. Spores (12–)14–19 × 6–9 µm.

Distribution in Fennoscandia and Baltic countries – Finland, Norway, Sweden (Nordin et al., 2011).

Specimens examined – WLR, Kingisepp District, Ka, Hogland Island, Somerikonvuoret, in rupe inundata, 1875, Vainio s.n. (TUR-V 30331); Vyborg District, Ka, Vyborg (Viipuri), Tervaniemi, on stone, 05.1875, Vainio s.n. (TUR-V 30312).

VERRUCARIA SPARSUSCULA Nyl.

The species is only known from the type locality in the WLR, Vyborg, Russia.

Description – Thallus fleck-like to rimose, pale brown to medium brown. Perithecia 0.15–0.2 mm, 1/2-immersed. Involucrellum to the middle of the exciple, ca. 30–50 µm thick. Exciple brown, 0.15–0.2 mm. Periphyses ca. 25 × 2–3 µm. Spores 0–1?–septate, (10–)12–15 × 6–8 µm. Note – *Verrucaria sparsiuscula* was described by Nylander (1877: 462) and accepted by Vainio (1921: 70). Later (1948) Magnusson identified the specimen H-NYL 2638 as *Thelidium* cf. *minimum*. Since then the species has been considered as a synonym of *T. minimum* (e.g. Nordin et al., 2011). However, *T. minimum* has a pale exciple and narrower spores (Zschacke, 1934).

Specimens examined – WLR, Vyborg District, Ka, Vyborg (Viipuri), Hiekka, ad saxa granitica calce ob-

ducta, 1875, Vainio s.n. (H-NYL 2638; TUR-V 30267, syntypes).

VERRUCARIA TECTORUM (A. Massal.) Körb.

Verrucaria tectorum is the only isidiate or sorediate *Verrucaria* species reported from northern Europe. New to Russia.

Description – see Breuss & Berger (2010).

Distribution in Fennoscandia and Baltic countries – Norway, Sweden (Nordin et al., 2011).

Specimens examined – SPb, Kronshtadt District, Kotlin Island, Zapadny Kotlin protected area, fort Shantz, 60°01'33"N, 29°40'27"E, on the margin of an old concrete wall, 12.07.2007, Konoreva & Stepanchikova Kr-18 (H); Kotlin Island, Zapadny Kotlin protected area, southern part of the fort Shantz, 60°01'31"N, 29°40'24"E, on concrete wall, 21.07.2007, Konoreva & Stepanchikova Kr-20ad. (H).

VERRUCARIA TORNENSIS H. Magn.

Verrucaria tornensis is rather common in Finland on calcareous rocks and in lime quarries. New to Russia.

Description – Thallus endolithic or usually epilithic, 0.05–0.2(–0.25) mm thick, grey or pale brown. Perithecia (0.15–)0.2–0.25 mm, 1/2–3/4-immersed. Involucrellum apical or to the middle of the exciple, appressed to the exciple or somewhat spreading, 30–50 µm thick. Exciple dark (rarely solitary pale exciples), 0.15–0.2(–0.25) mm. Periphyses ca. 20–25 × 2(–3) µm. Spores 18–25 × (8–)9–13 µm.

Note – The species is often confused with *V. epilithica* (for differences see *V. epilithica*).

Distribution in Fennoscandia and Baltic countries – Finland, Sweden (Nordin et al., 2011).

Specimen examined – WLR, Kirovsk District, between Vasil'kovo and Gorodische villages, Lava River Canyon protected area, 59°52'N, 31°35'E, Ordovician outcrops on the Lava River bank slopes, on calcareous stone, 25.05.2008, Stepanchikova s.n. (H).

VERRUCARIA TRABALIS Nyl. (syn. *V. SAEPINCOLA* Vain.).

Verrucaria trabalis is only known from northern Europe. All collections are from bases, exposed roots or logs of trees occurring on shores. New to LR.

Description – Thallus thin, continuous or consisting of tiny areoles, rarely rimose, usually green, rarely brown or grey, green colour fading during storage turning to grey. Perithecia 0.1–0.15 mm, 1/2–3/4(–1)-immersed, often partly thalline covered. No involucrellum. Exciple dark, but frequently the lower half of the

exciple pale or only the apex dark, 0.1–0.15 mm. Spores 15–23 × 7–10 µm.

Note – *Verrucaria saepincola* described from Karelia ladogensis (Vainio, 1921) is here considered to be conspecific with *V. trabalis*.

Distribution in Fennoscandia and Baltic countries – Finland, Sweden (Nordin et al., 2011).

Specimen examined – ELR, Tikhvin District, Vepssky Forest protected area, northern shore of Melosero Lake, 60°08'10"N, 35°06'49"E, alt. 237 m a. s. l., old-growth pine-aspen-spruce forest, on bark of *Populus tremula*, 19.07.2004, Kuznetsova Veps-35 (H).

VERRUCARIA TRANSFUGIENS Zschacke

The species is rather common in Finland on calcareous rocks and in lime quarries. New to Russia.

Description – Thallus endolithic or inconspicuous, white or grey. Perithecia 0.2–0.3 mm, 3/4–1-immersed, leaving deep pits in the rock. Involucrum apical and short, not distinct in every perithecium. Exciple dark, 0.2–0.3 mm. Spores 18–26(–28) × 9–13 µm.

Note – *Verrucaria karelica* Vain. and *V. dolomitica* (A. Massal.) Kremp. have larger spores, but there is a considerable overlap (see Pykälä, 2011). *Bagliettoa calciseda* (DC.) Gueidan & Cl. Roux and *V. foveolata* (Flörke) A. Massal. have no involucrum, but the exciple is often apically thickened.

Distribution in Fennoscandia and Baltic countries – Finland (Nordin et al., 2011).

Specimen examined – ELR, Boksitogorsk District, Ragusha River protected area, right bank of the Ragusha River, 1300–1500 m downstream from the bridge, near the waterfalls, 59°17'03"N, 33°55'13"E, on calcareous cliff, 19.07.2004, Kuznetsova 117-04 (H).

VERRUCARIA XYLOXENA Norman

This species grows on soil, mosses and plant debris in disturbed places. It has been found in the WLR, ELR and SPb (Himelbrant et al., 2006; Kuznetsova et al., 2007; Stepanchikova et al., 2011). It is probably widely distributed in the LR. Distribution in Fennoscandia and Baltic countries – Finland, Norway, Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2011), Lithuania (Motiejūnaitė, 1999).

Specimens examined – SPb, Petrodvorets District, vicinity of Stary Peterhof, Sergievka Park, near the greenhouse in the central part of the park, 59°53'N, 29°50'E, on the ground, 17.10.2004, Himelbrant, Konoreva & Stepanchikova Serg-29 (LECB); WLR, Vyborg District, Ka, Berezovye Islands (Koiviston Saaret), Bol'shoj Berezovij Island (Koivusaari), south-eastern

margin of Krasny Ostrov village, 60°17'N, 28°40'E, on soil and plant debris at house ruins, 13.08.2008, Alexeeva & Ahti s.n. (H, LE-L10358); ELR, Lodejnoj Pole District, Nizhnesvirsky Nature Reserve, Lakhta Bay, 60°38'N; 33°03'E, sparse young pine forest, on soil, 06.05.1999, Himelbrant 8-99 (LECB 316-8-99).

DUBIOUS SPECIES

VERRUCARIA ACROTELLA Ach.

The species was reported from siliceous stones from the WLR, Hogland (Brenner, 1886: 126; Vainio, 1921: 42). The record by Malysheva (2003) from the SPb is erroneous, the specimen is *V. dolosa*. The material collected by Vainio (cited below) has only badly overmature perithecia, and it can not be identified. Furthermore, *V. acrotella* is a dubious species, which identity can not be determined (Orange, 2008).

Specimen examined – WLR, Kingisepp District, Ka, Hogland Island, Mäkienpäälys, supra lapides granitico et conchas vetustas littorales, 1875, Vainio s.n. (TUR-V 30351), syntype of *V. acrotella* Ach. f. *subathallina* Vain.

VERRUCARIA FLOERKEANA Dalla Torre & Sarnth.

This species was recorded from the SPb by Stepanchikova et al. (2008). Our present work shows that the specimen corresponds in fact to *V. dolosa*.

Specimen examined – SPb, Primorsky District, between Lisy Nos and Ol'gino, Severnoe Poberezh'je Nevskoj Guby protected area, 59°59'35"N, 30°05'49"E, on concrete on disturbed ground, 15.07.2007, Konoreva & Stepanchikova Lis-13 (LE-L10357).

VERRUCARIA FUSCA Pers.

The species was reported from Gogland (Hogland) Island, Selkäpajanlahti by Brenner (1886) as *V. nigrescens* Pers. var. *fusca* (Pers.) Nyl. The specimen could not be located. Vainio (1921) did not cite the specimen – thus, it probably has been re-identified.

VERRUCARIA NIGRESCENS Pers.

This is one of the most frequently recorded species in the LR (e.g. Vainio, 1878; Malysheva, 2003; Himelbrant et al., 2006). However, all herbarium specimens originally identified as *V. nigrescens* proved to be other species. Its presence in the region should therefore still be confirmed. *Verrucaria nigrescens* is common in the neighbouring areas (e.g. Finland), and most probably exists in the LR.

VERRUCARIA OBNIGRESCENS Nyl.

Verrucaria mauriza was synonymized by Vainio (1921) with *V. obnigrescens*, but this is considered by us as erroneous (see *V. mauriza*). Vainio also identified a specimen from another locality as *V. obnigrescens* (cited below). This specimen is in poor condition, with very few perithecia (ca. 0.15–0.2 mm, 3/4–1-immersed) which seem to be mostly overmature. One mature perithecium was studied. Involucrellum extends to the middle of the exciple and is strongly diverging from the exciple, ca. 40–50 µm thick. Exciple pale, 0.2 mm. Spores 15–22 × 7 µm. W. Nylander annotated to the specimen that the spore size is 16–26 × 9–11 µm. This specimen is not *V. obnigrescens*, but can not be identified.

Specimen examined – WLR, Kingisepp District, Ka, Hogland Island, Ruokolahdenjärvenmäki, 12.08.1868, Brenner s.n. (H).

VERRUCARIA UMBRINULA Nyl.

Reported from Vyborg and Hogland Island (Vainio, 1878, 1921) and from Konevets Island (Räsänen, 1944). The specimens TUR-V 30331 and 30312 were re-identified as *V. rejecta*. We were not able to identify the Uuras specimen (Vainio, TUR-V 04816), but it is not *V. umbrinula* because the involucrellum extends to the exciple-base level. Other specimens (Vainio, H-NYL 2653; Räsänen, H 8003835) are too poor for identification (only overmature perithecia found).

Specimens examined – WLR, Kingisepp District, Ka, Hogland Island, Somerikonvuoret, in rupe inundata, 1875, Vainio s.n. (TUR-V 30331); Ka, Hogland Island, in rupe inundata, 1875, Vainio s.n. (H-NYL 2653); Konevets, ad salam littoralem, 16.06.1938, Räsänen s.n. (H 8003835, in the specimen of *Aspicilia cinerea* (L.) Körb); Vyborg District, Ka, Vyborg (Viipuri), Tervaniemi, on stone, 05.1875, Vainio s.n. (TUR-V 30312); Ka, Vysotsk (Uuras), on stone, 07.06.1875, Vainio s.n. (TUR-V 04816).

VERRUCARIA VIRIDULA (Schr.) Ach.

The species was reported from Strel'na (SPb) by Malysheva (1994), but not cited later by the same author (Malysheva, 2003). No specimens were found in LE and H.

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